

NEW AND INTERESTING RECORDS OF ADVENTIVE PLANTS FROM THE AUCKLAND INSTITUTE AND MUSEUM HERBARIUM 4

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Abstract. This fourth list of some recent additions to the Auckland Institute and Museum Herbarium (AK) and re-identification of earlier gatherings provides first records for some adventive species and further information of the distribution of others.

Recent additions to the Auckland Institute and Museum Herbarium have been made by various collectors, including members of the staff. A few of the gatherings have provided first records for New Zealand or at least for the North Island so far as I have been able to ascertain, as, for example, *Ranunculus trichophyllus*, *Artemisia verlotiorum* and *Galium minutulum*. Corrected identifications have also been made as in the case of *Oenothera biennis* to *O. erythrosepala*. During the past two or three years much literature dealing with weeds and adventive plants in New Zealand has been published to which due attention has been given and, as in previous lists in this series, early publications have been referred to for historical background.

The nomenclature adopted is that published by the New Zealand Weed and Pest Control Society (1969) with amendments by Healy (1975). For species not in those works references are given to publications consulted. Specimens are cited by collector's numbers or, in the absence of these, by the AK Herbarium number.

RANUNCULACEAE

Ranunculus trichophyllus Chaix

Waitahanui stream, near outflow into Lake Taupo, 1977, A. E. Orchard 4884.

Water-buttercups have been recorded in New Zealand for some time, generally under the name *R. fluitans* Lam., of which Allan (1935) remarks "Widely distributed in streams and pools in North and South Islands. This is the *R. aquatilis* of Cheeseman's list." As may be seen from the treatment by Cook (1964) several species are recognised in Europe; it is likely that more than one has reached New Zealand, possibly introduced by aquarists. The specimen cited above differs from true *R. fluitans* in its shorter leaves, less than 4 cm long, its lunate nectaries and its shorter petals, not more than 5 mm long. Aquatic species of *Ranunculus* need to be carefully floated out before pressing and a note should be made as to whether the finely dissected submerged leaves collapse or not when taken out of water.

CERATOPHYLLACEAE

Ceratophyllum demersum L.

Auckland, Glen Innes, Tahuna-Torea Nature Reserve, 1975, R. M. Lockley, AK 136188; Waikato Co., Waikato River, between Mercer and Meremere, 1977, A. E. Orchard 4869.

These two are the only gatherings in the Herbarium of this aquatic species, another possible introduction by aquarists and one of the water-weeds potentially dangerous to hydro dams. Matthews (1975) and Mason (1976) provide information on the various lakes where it occurs and give the first record as 1961 from Napier.

ONAGRACEAE

Oenothera erythrosepala Borbas

Mangonui Co., Taipa beach, hollow of young dunes, 1950, R. C. Cooper, AK 36036 as *O. biennis* L.; Westland, Ruatapa rubbish tip, 1977, T. A. Halliday 540, conf. P. H. Raven; Rangitikei Co., Bulls, waste ground, 1978, P. J. Brownsey, AK 143481.

The specimen confirmed by Dr. Raven has clear yellow flowers with petals over 40 mm, the stem covered with red-based bulbous hairs and is from a population of plants up to 1.5 m tall. It lacks the reddish stripes on the sepals, which provide a character of at least mature plants of *O. erythrosepala* but the much larger flowers distinguish it from *O. rubricaulis* Klebahn, which has petals no longer than 25 mm. The specimen AK 36036 is tall enough to spread over five herbarium sheets and its stem is covered with red-brown hairs, which distinguish it from *O. biennis*: although flowers are lacking I would place it under *O. erythrosepala*. The third specimen, indicating a widespread distribution, completes the Herbarium representation of this evening primrose. Other records have been published under the synonym *O. lamarkiana* de Vries by Allan (1940) who gives Wellington and Tauranga as localities. Healy (1969) records it from two rivers in Canterbury and later (Healy 1973) says it occurs in low rainfall areas of the South Island, whilst Matthews (1975) states that it occurs in waste places in both Islands.

HYPERICACEAE

Hypericum mutilum L.

Matamata Co., swamp around stream in farmland, near Matamata, 1977, A. E. Wright 2064.

This constitutes the first New Zealand material of this St John's Wort in the Herbarium. Healy (1976) reports the species as "Recently found in swampy places in the North Cape district", giving Lake Omapere as a second locality and Tutira, Hawkes Bay, as a doubtful third. Connor (1977) mentions it as a naturalised species but without localities.

MALVACEAE

Abutilon theophrasti Medic.

Franklin Co., in a crop paddock, Ararimu, 1978, noxious weed Inspector, AK 143622.

A note with this specimen states that it was sent as a suspected impurity in millet seed to Mr A. W. Auld of the Ministry of Agriculture and Fisheries at Pukekohe. It was kindly presented to the Herbarium (AK) by Mr A. E. Esler as a first record in New Zealand. I certainly have found no other reference to the species, which is known both as a wool alien and a bird-seed alien in the British Isles. According to Webb (1968) it is native in some parts of the European continent but adventive to others.

Sida rhombifolia L.

Kermadec Islands, Raoul Island, 1956, R. C. Cooper, AK 44087; Mangonui, Ahipara golf course, 1977, R. C. Cooper, AK 141415, AK 141768.

The last two sheets bear specimens collected in January and March respectively, the labels of both noting that the plant was a troublesome weed. With reference to its occurrence in the Kermadecs, Sykes (1977) says "Probably accidentally introduced to Raoul in the early days of European settlement" and goes on to comment that it had become common by 1908. Other references to the species are by Healy (1957) who records Dargaville and Mangonui as localities and by Matthews (1975) who states "Not widely known in New Zealand and possibly confined to higher rainfall areas." The Herbarium possesses only the three sheets cited above.

EUPHORBIACEAE

Euphorbia maculata L.

Streets of Auckland, T. F. Cheeseman, AK 74945 (under the synonym *E. hypericifolia* L.); Matamata, Arawa Street, waste ground, 1977, A. E. Wright 2053.

Of these two sheets, which represent the species in the Herbarium, the former is undated but it may be taken as a voucher for the record published by Cheeseman (1883), who subsequently reported it as nearly extinct. Allan (1940) adds no further localities and much later Connor (1977) refers to it as "occasional about Auckland City in waste places." Matamata, therefore, provides the first record that I can trace beyond Auckland.

UMBELLIFERAE

Ammi majus L.

Auckland Domain, T. F. Cheeseman, AK 33187; East Tamaki, 1965, L. A. Joy, AK 105815 det. New South Wales Nat. Herb.; Auckland, Mt Eden, weed in garden, 1977, K. A. J. Wise, AK 143179.

Cheeseman (1883) first recorded this species from the Auckland Domain and Remuera, with the comment "rare at present but likely to spread". No further localities are given by him in subsequent publications or by other authors such as Kirk (1899) and Allan (1940), who repeat Cheeseman's record, for which the first specimen cited above may be taken as a voucher. The second sheet indicates a continued distribution within the Auckland area, in which Mr Wise's gathering provides a further locality.

Eryngium campestre L.

Fields near Matamata, T. F. Cheeseman, AK 33298.

This undated specimen is the only example of this umbellifer, which is sufficiently thistle-like to be included by Healy (1976) in his section dealing with true thistles. He comments that it is rare in poor pastures. Allan (1940) says that it "has been noted at Matamata and near Mangonui". I have not come across other references to this plant in New Zealand except that Healy (1975) includes it in his additions to standard common names as "field eryngo".

RUBIACEAE

Galium minutulum Jord.

Auckland, Rangitoto Island, Islington Bay, in moss on rocks, 1977, A. E. Esler, AK 143201, det. Lynne Scott.

This specimen was presented by Mr Esler as the voucher for a potential first record. I am unable to find any reference in New Zealand literature to this minute bedstraw, the leaves of which are only 1.5-3 mm in length and 0.8-1 mm in width. The tiny ovoid fruits, with miniscule hooked hairs, are less than 1 mm long. According to Ehrendorfer (1976) it inhabits Mediterranean coast and hills and shady rocks in S.W. Europe.

COMPOSITAE

Artemisia verlotiorum Lamotte

Waitemata, Orewa, grounds of Orewa House, 1972, C. E. Gregory, AK 129759, as *A. vulgaris* L.: Waitemata, Waiwera, near hot pools, 1977, H. Skelton, AK 141849.

I find no other reference to the occurrence of this species in New Zealand. It differs from *A. vulgaris* in being strongly aromatic, having a much more leafy inflorescence, the leaves having conspicuously elongated ultimate segments, and in other less readily assessable characters. A description may be found in Tutin (1976), who includes it in the European flora as an adventive species from China.

Cynara cardunculus L.

Mangonui, T. F. Cheeseman, AK 89848; Auckland, Herne Bay, weed in flowerbed, 1977 (Mr) Joseph, AK 141692, AK 143324.

The cardoon was first recorded by Cheeseman (1897) from the North Cape district and his undated specimen may be taken as a voucher. The two sheets of the later, and only other, addition bear respectively typical large spiny leaves and two fine heads of purplish florets. Other localities for this spectacular composite are The Bluff, Napier in Kirk (1899) and Canterbury in Healy (1969). The latter author (Healy 1976) keys the species out among the thistles and Matthews (1975) states that the plant is found as an "isolated garden escape".

Gnaphalium candidissimum Lam.

Lake Waiparera, N. of Kaitaia, 1961, P. Hynes, AK 71205, det. A. J. Healy; Muriwai Lake, N.W. of Helensville, 1968, P. Hynes, AK 119830, det. C. Jeffrey (Kew); Mangonui, Ahipara gumfields, 1970, R. C. Cooper, AK 125601; Hokianga, mouth of Waihopai River, 1977, A. E. Wright 1638.

In his paper on the classification of the genus *Gnaphalium*, Drury (1970) cites a collection made in 1961 by Miss L. B. Moore from the same locality as that made

by Mrs Hynes, who was on the same excursion. Miss Moore's specimen is in the Herbarium of Botany Division, DSIR, Christchurch (CHR). The other three cited above are additional records and I have discovered no further published ones. Drury (1970) states that this is the only African species among the adventive cudweeds in New Zealand and it differs from the several American ones in having a corymb of clusters instead of a spicate inflorescence. The whole plant is clothed in a dense white indumentum as indicated by the specific epithet.

Soliva valdiviana Phil.

Auckland, Parnell, Cathedral Place, rough lawn in E. G. Turbott's garden, 1976. J. H. Goulding 863.

The occurrence of this species in New Zealand was first noted by Healy (1948), who points out its confusion with other species but does not cite localities. In a paper devoted to the genus *Soliva*, (Healy 1953) localities are given and illustrations show *S. valdiviana* to be the only species lacking achenial wings. More recently, Healy (1969) comments that it has increased in abundance as a weed of lawns and playing fields in Canterbury. Matthews (1975) describes it as "possibly the most widespread". All material of the genus in the Herbarium was examined and that above was found to be the only example of this Onehunga-weed, and so far as I am aware, provides the furthest north record. Another Auckland locality, slightly further south, is Aratiki nature trail, quoted by Cameron (1975).

PRIMULACEAE

Anagallis minima (L.) E. H. L. Krause

Auckland, Waikumete Cemetery, 1976, A. E. Esler, AK 143022 (dupl. CHR 276649).

The only other record for this plant, known to British botanists as chaffweed, is from Cape Turakirae, Wellington, listed in an Appendix as rare by Bagnall (1975) under the synonym *Centunculus minimus* L. The specimen, a voucher for the second New Zealand record, was presented by Mr Esler. A description is given by Ferguson (1972). Very much smaller than the well-known scarlet pimpernel, *Anagallis arvensis* L., chaffweed needs to be carefully searched for.

PLANTAGINACEAE

Plantago arenaria Waldst. & Kit.

Auckland, Tooley Street, in crack between pavement and wall, 1977, A. E. Wright 2016.

This is the only Herbarium example of this species, which was first noticed for New Zealand by Healy (1957) from Omarama. He later (Healy 1969) gives it a casual and local status in his Canterbury list and indicates its origin as an impurity in seed. Chater & Cartier (1976) include the species in the European flora, citing *P. ramosa* Ascherson, *P. psyllium* L. and *P. indica* L. as synonyms. The common adventive plantains in New Zealand are scapose but *P. arenaria* has a leafy stem.

LABIATAE

Lycopus europaeus L.

Waikato, north end of Lake Waikare, c. 5 km east of Te Kauwhata, 1977, A. E. Orchard 4871.

This gathering appears to be the first recorded for the North Island as the only reference I have traced in New Zealand literature is in Allan (1940), who notes it as "established in one locality near Greymouth" in the South Island. Gipsy-wort is a frequent inhabitant of wet places in Europe.

LEMNACEAE

Spirodela punctata G. F. Meyer

Auckland, Lake Pupuke, 1972, J. Gurr, AK 129847, det. J. H. Goulding as *S. oligorrhiza* (Kurz) Hegelm. (a synonym, as is *Lemna oligorrhiza* Kurz.).

Lancaster (1930) first records this species from Awapuni, near Palmerston North, regarding it as "probably native". Moore & Edgar (1970) accept it as indigenous but Healy (1969) regards it as partly indigenous and partly introduced in the Canterbury area. More recently Healy (1973) includes it among the free-floating adventive aquatics and says it is widespread. Matthews (1975) and Mason (1976) indicate its occurrence from the Waikato to South Canterbury. The sole gathering in the Auckland Herbarium, therefore, provides the furthest north record for this small duckweed, characterised by its two or three rootlets and purplish underside.

AMARYLLIDACEAE

Allium ampeloprasum L.

Mangonui, T. F. Cheeseman, AK 95698, 95699; Mangonui, Doubtless Bay, 1977, C. Bearsley, AK 143325.

The former gathering, spread over two sheets, is a potential voucher for the record "shores of Doubtless Bay" in Cheeseman (1883). The latter, the only other in the Herbarium, is accompanied by a letter with some interesting information. It is called "French garlic" by older Maori residents in the area and was gathered at a little beach, "an unlikely place for gardens"; it is supposed to have originated from the de Surville expedition of 1769. I have not found other reference to the species in New Zealand literature.

CYPERACEAE

Cyperus polystachyus Rottb.

Hokianga, Te Rewa Point, saltmarsh beside road, 1977, A. E. Wright 1654; Hokianga, low scrub at mouth of Waihopai River, 1977, A. E. Wright 1655.

These constitute the first two acquisitions by the Herbarium and the first published records for New Zealand so far as I know. The species is included by many authors of Floras of the warmer regions of the world; a detailed description, for example, may be found in Bentham (1878) for Australia.

GRAMINEAE

Panicum dichotomiflorum Michx.

Auckland, corner of Symonds Street and Grafton Road, grass verge along base of wall, 1977, A. E. Wright 2017.

Since my earlier record for this grass (Bangerter 1976) this second sheet has been added to the Herbarium. The species is described by Matthews (1975) as "an aggressive weed . . . confined to the northern half of the North Island." Smooth witch-grass is a crop weed recognised by agriculturists and is often observed in other habitats by botanical field-workers from whom I gain the impression that it is under-recorded. Matthews (1976) discusses its control, illustrating his paper with a photograph.

Urochloa panicoides P. Beauv.

Auckland, One Tree Hill, Korokino Road, growing in waste ground beside house, 1978, A. E. Wright 2658.

This appears to be the first New Zealand record for this grass, which originates from Africa, extending to India. It has also been introduced into Australia. The identification was kindly provided by the Royal Botanic Gardens, Kew. Further notes on the herbarium label state "low, spreading rosette-like form; leaves soft, light green, hairy; rooting at lower nodes". These indicate that this gathering should be placed under the var. *pubescens* (Kunth) Bor according to Bor (1960).

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